

Diagnosis: Females differ from females of the adjoining race *crocatus* of Angola and Northern Rhodesia in having a markedly more slender bill, in the reduced black mark through the eye, and in having only a trace of chestnut wash on the throat. Width of bill at base: *tenuirostris*, 3 ♀♀, 6.0, 6.0, 6.1; *crocatus*, 15 ♀♀ 6.7–7.5 (7.2). Males are not known.

Measurements of type: Wing 71; tail 59; bill length 20; bill width 6.0; tarsus 22 mm.

Range: Northern Ngamiland, from Sepopa on the north-west side of the Okavango swamp east to Kabulabula on the Chobe River.

Remarks: Roberts (1935, *Ann. Transv. Mus.*, 16: 173) was the first to recognise that there might be a slender-billed race of *ocularis* on the upper Zambesi. He recorded a male (actually a female according to Prozesky, *in litt.*) from Kabulabula that had a bill much more slender than any other specimen in the Transvaal Museum. The range of this slender-billed form cannot be very extensive; birds from further up the Zambesi in the Kalabo district of Barotseland are normal *crocatus*.

The slenderness of the bill of *tenuirostris* is accentuated because it averages longer as well as being narrower than in *crocatus*. Comparative measurements of females are:

		Bill length	Bill width (at base)
<i>crocatus</i>	(15)	17.5–20 (19.0)	6.7–7.5 (7.2)
<i>tenuirostris</i>	(3)	20, 20, 20.5	6.0, 6.0, 6.1

The species was uncommon in Ngamiland and was only seen at Sepopa. First noticed in early February at a time when a rapid rise in the Okavango River sent the water over the flood plain. At this time there was a major influx of ploceids, *Euplectes orix* and *E. axillaris* appearing in large numbers. The two *Euplectes* were preparing to breed, but the *ocularis* specimens are in worn plumage, and may have already bred.

On variation in the Greater Honeyguide *Indicator indicator* (Sparrman)

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It is generally conceded, following Grant, *Ibis*, 1915, pp. 430, 431, and Friedmann, *U.S. Nat. Mus. Bull.* No. 208 ("The Honeyguides"), 1955, p. 172, that the Greater Honeyguide *Indicator indicator* (Sparrman), 1777: Great Fish R., near Somerset East, eastern Cape Province, is "remarkably uniform throughout its vast range, no subspecies being recognisable" (Friedmann, *loc. cit.*). A recent study undertaken in the Durban Museum of material preserved in southern African collections shows that such a view is not strictly correct, and that marked size-variation occurs in various parts of the range, which appears to have some definite geographical and perhaps subspecific basis. While specimens currently available from some of the critical areas are too few in number to permit of any breakdown of the species into races at the present juncture, I feel that the findings which have resulted from my researches are of sufficient interest to be now placed on record in the hope that other workers more advantageously placed than I will endeavour to bring together further material.

In the topotypical populations of the Cape Province, the wings of fully adult ♂♂ *I. indicator* measure 113.5–116; the tails 72.5–78.5, and ♀♀ wings 106.5–111.5; tails 67.5–70 mm. Populations more or less identical mensurally occur in the Orange Free State, the Transvaal (not eastern lowveld), Swaziland and Natal (interior), northwards to northern and eastern Bechuanaland and Southern Rhodesia in sub-continental South Africa (see table). In the eastern humid lowlands of southern Africa, and particularly the middle and lower Zambesi R. valley, and the valley of its affluent, the Luangwa R., markedly smaller-sized birds are to be found, the wings of ♂♂ measuring 105.5–112.5; tails 65–71; ♀♀ wings 98–104; tails 58–66 mm. Of the material available of this latter assemblage of

TABLE
MEASUREMENTS OF SOME *Indicator indicator* POPULATIONS
FROM CENTRAL, EASTERN AND SOUTHERN AFRICA

Populations	No. of Specimens	Wings ♂♂	Tails	No. of Specimens	Wings ♀♀	Tails (mean)
Cape Province	7	113.5–116 (114.4)	72.5–78.5 (74.3)	6	106.5–111.5 (108.9)	67.5–70 (68.8)
Transvaal (plateau) and Swaziland	12	113–120 (115.7)	70–80.5 (75.3)	10	105–112 (108.9)	65–73 (68.3)
Bechuanaland, S. Rhodesia, Barotseland, N.R.	19	112–117 (114.4)	71–76 (73.8)	11	102.5–113 (108.0)	64–73 (67.3)
N. Rhodesia (except Luangwa R. valley)	7	108–117 (114.3)	68.5–77.5 (74.1)	8	106–114.5 (108.7)	61–72 (67.2)
N. Rhodesia: Luangwa R. valley	18	110–119 (113.2)	67.5–75 (71.1)	12	98–112 (104.9)	58–68.5 (63.2)
Middle and lower Zambesi R. and Shire R. valley, Nyasaland	4	105.5–113 (110.9)	65–71 (68.6)	2	101.5, 103	60, 62.5
Natal (coast) and Zululand, Sul do Save and adjacent Transvaal lowveld	3	109.5–112.5 (111.3)	67.5–71 (69.5)	4	99–104 (102.0)	62–66 (64.1)
Nyasaland (not Shire R. valley), and S. Tanganyika	4	114–118 (115.9)	70.5–79 (76.4)	1	111	67
N. Tanganyika (M. A. Traylor, J. G. Williams, P. A. Clancey)	5	113–118 (114.5)	69–76 (72.6)	2	109, 113	66, 67
Kenya (M. A. Traylor, J. G. Williams, P. A. Clancey)	10	111–117 (113.6)	69–75 (72.6)	12	107–111 (109.2)	63–72 (67.5)
Uganda (M. A. Traylor)	6	114–116 (115.1)	69–75 (72.5)	4	106–110 (109.0)	64–69 (67.0)
Ethiopia: (M. A. Traylor, J. G. Williams)	5	111–117 (114.2)	71–75 (73.2)	2	105 (worn) 109	65, 65

populations, the two smallest birds are remarkably diminutive specimens taken on the 22nd and 26th August, 1952, at some point in the Luangwa R. valley in the Mpika district for Major W. E. Poles (Nat. Mus. S.R. Reg. Nos. 10300, 10301), the wings measuring only 98 and 98.5; the tails 58 mm. in both instances, while the prepared specimens are only about two-thirds of the size of Cape females of similar make. They also show olive and not cadmium yellow shoulder patches. The Luangwa R. valley is a critical area for many birds which exhibit polytypic size-variation, the populations of the valley itself often consisting of small-sized birds which are usually of the same racial taxon as occurs along the south-eastern coastal lowlands of Africa, and which give way in a steep transitional shift along the western aspects of the valley to the more massive birds resident to the north-west and north of the Muchinga Range. The rest of the rather comprehensive sample of *I. indicator* from the Luangwa R. valley (all from Mpika district) shows this transition from small-sized to the larger birds of the plateau populations, thus:—

♂♂ wings 110, 111 (3), 112 (3), 113 (4), 113.5 (2), 114, 115 (3), 119; tails 67.5, 69 (2), 69.5 (3), 70, 70.5, 71 (2), 71.5, 72 (3), 72.5, 74 (2), 75. ♀♀ wings 98, 98.5, 100, 101, 102.5, 105.5, 106.5, 108.5 (2), 109 (2), 112; tails 58 (2), 60 (2), 63, 63.5, 65.5 (2), 65, 66, 68, 68.5 mm.

I believe that a good case could be advanced for considering the Zambesi, Luangwa and south-eastern littoral birds as a distinct small-sized race, but Major Melvin Traylor, of Chicago, has kindly drawn my attention to the existence of similar small-sized birds in northern Angola and the southern Congo (Lualaba R.). Measurements of four birds from this region in the Chicago Natural History Museum are:

♂♂ wings 106, 108; tails 67, 68, 2 ♀♀ wings 95, 97, tails 57, 59 mm.

There seems to be no direct connection between the Zambesi and south-eastern lowland birds and those of the northern Angola and adjacent regions, however, as birds from north-west and north of the Muchinga Range, Northern Rhodesia, are large-sized with wings in ♂♂ generally 114–117; tails 72.5–77.5 (a single ♂ from Kasama has a wing of only 108; tail 68.5). ♀♀ wings 106–114.5, tails 61–72 mm. On *a priori* grounds it seems that we are dealing with a distinct and probably quite stable small form with a wide range over south-central and south-eastern Africa, but the apparent sundering of its range in Northern Rhodesia and much of Nyasaland makes its formal treatment as a geographical race problematical at the present time. Study of the size details of three major blocks of *I. indicator* populations in zoogeographical South Africa for which reasonably good samples are available (see table) will show that size-variation in such populations is conservative, and it is difficult to believe that any central African population would normally show a wider range of mensural variation, especially in view of the fact that the populations from Tanganyika north to Ethiopia and the Sudan are again similar to those of South Africa in size and equally conservative in their range of size-variation. Whether the true relationship between populations of large- and small-sized birds in central Africa is obscured by migratory movements on the part of one or both groups of populations is not known, but Friedmann *loc. cit.* is of the opinion that the species shows no migratory tendency, though seasonal variation in local incidence is on record, and suggests the existence of some movement.

Clearly the marked size-variation in the Greater Honeyguide can be no further dealt with on the basis of existing material. The diminution in individual size in some populations of *I. indicator*, as demonstrated above, is undoubtedly connected to temperature and relative humidity in the biotope, but it may also be in some way associated with some difference in breeding biology, such as an adaptation to enable such populations to exploit a range of smaller hole-nesting host species.

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The lower altitudinal limit of the montane forest birds of the Cameroon Mountain, West Africa

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From a study of the literature, notably Reichenow (1892) and Bannerman (1915 and 1930–1951), one would infer that the 3,000 ft. contour marks the lower limit of the montane forest birds of the Cameroon Mountain.

Indeed, although the Cameroon Mountain has attracted many collectors and observers who have recorded what they saw and collected, I can find references to only four true montane forms occurring below the 3,000 ft. contour, namely, *Turdus libonyanus nigrilorum* Reichenow at 1,700 ft. (Serle, 1962, p. 125), *Psalidoprocne fuliginosa* Shelley at 2,500 ft. (Young, 1946, p. 381), *Laniarius poensis poensis* (Alexander) at 1,400 ft. (Serle, 1950, p. 620), and *Cinnyris reichenowi preussi* Reichenow at 1,000 ft. (Serle, 1950, p. 625 and 1954, p. 74).

In tropical Africa an altitude of 3,000 ft. is remarkably low for the occurrence of typical montane bird communities (*c.f.* Hall and Moreau, 1962, p. 317 footnote), yet it appears from the notes that follow that such communities exist at even lower altitudes on the Cameroon Mountain, at least on its south-eastern slopes.

The search for montane forms at low altitudes met with most success in the neighbourhood of Saxenhof (4° 6' N., 9° 13' E.). Primary forest no longer exists at Saxenhof (indeed most of the area of the south-eastern slopes of the Mountain below 3,000 ft. has long since been cleared for plantations and native farms) and the montane birds inhabited patches of poor cut-out second growth and shrubbery.

In the following list of birds occurring at or near Saxenhof, a Roman numeral indicates the month of the year of the observation and an asterisk indicates that the record was confirmed by collecting a specimen or specimens. The altitudes were measured with an altimeter.